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Application Serial No. 09/721,141

REMARKS

The Applicant and the undersigned thank Examiner Irshadullah for the careful review of this application. Claims 40-49 have been rejected. Upon entry of this amendment, Claims 40-49 remain pending in this application. The independent claims are Claims 40, 43 and 44. Consideration of the present application is respectfully requested in light of the above amendments to the application and in view of the following remarks.

Claim Rejections under 35 U.S.C. § 101.

The Examiner rejected Claims 40-42 under 35 U.S.C. § 101 as directed to non-statutory subject matter. The Applicant respectfully offers remarks to traverse this rejection.

The Applicant has amended independent Claim 40 in accordance with the Examiner's helpful comments. It is believed that amended independent Claim 40 now recites statutory subject matter. Reconsideration and withdrawal of this rejection are respectfully requested.

Claim Rejections under 35 U.S.C. § 102(e) and § 103(a)

The Examiner rejected Claims 40-49 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,406,476 to Deziel, Jr. et al (hereinafter the "Deziel reference") in view of U.S. Patent No. 5,893,074 to Hughes et al (hereinafter the "Hughes reference"). The Applicant respectfully offers remarks to traverse these pending rejections.

Independent Claims 40, 43, and 49

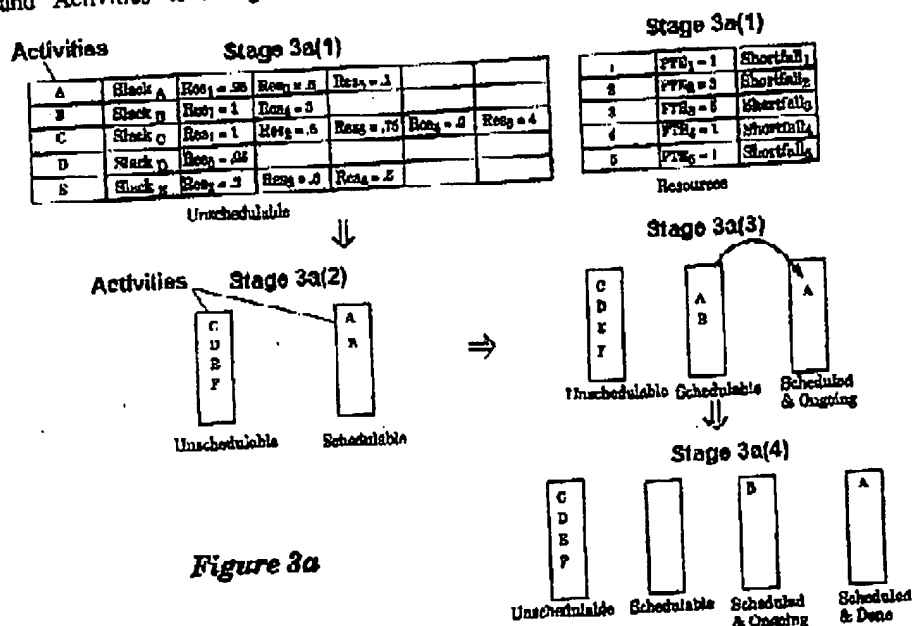
The rejection of Claims 40, 43, and 49 are respectfully traversed. It is respectfully submitted that the Hughes and Deziel references fail to describe, teach, or suggest (1) determining assignments that are independent of other assignments; (2) determining assignments that have finish date task constraints; (3) determining assignments that have start time task constraints; (4) scheduling the assignments that have

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start time task constraints before the assignments that are independent of other assignments and assignments that have finish date task constraints; (5) scheduling the assignments that are independent of other assignments; and (6) generating a schedule comprising the N assignments which is balanced and maximizes a utilization of the N resources.

Support for these steps can be found in the specification in Figure 5 and its corresponding description. Specifically, page 23, line 14 through page 24, line 10 provides support for the current amendment. Further, Tables 2 and 3 found on page 21 demonstrate one goal of the invention as claimed which is to achieve a balanced schedule.

The Examiner refers the Applicant to Figure 3a of the Dexiel reference in order to address the claims. An annotated version of Figure 3a from the Dexiel reference is reproduced below. In this annotated version the Applicant has added the words "Stages" and "Activities" to the figure in order to clarify what is taught by the Dexiel reference:



The Dexiel reference explains what is shown in Figure 3a:

"Associated with each activity are the resources and the amount of time with respect to a resource each activity requires. Furthermore, the

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amount of slack time for each activity is known. The resources are initialized by identifying the FTE Available, as well as a shortfall calendar[sic], for each resource [Stage 3(a)1]. The activities can be moved to the schedulable list if the activity has no predecessor activities which are not scheduled, that is, those activities located on the unschedulable or schedulable list. Referring to FIG. 3a, for example, activities A and B, having no unschedulable predecessors, are moved to the schedulable list while activities C, D, E and F remain on the unschedulable list [Stage 3(a)2]. The activities on the schedulable list are then ordered according to the amount of least slack. Thus activity A, which has a smaller amount of slack than activity B, is scheduled and moved from the schedulable list to the scheduled and on-going list [Stage 3(a)3]. The resources utilized by activity A are allocated thereby identifying, for example, that activity A requires 0.25 of resource 1, 0.5 of resource 3 and 1 of resource 5." [Bracketed material supplied and emphasized.] See Deziel reference, column 9, lines 48-68.

"Activity B is then moved to the scheduled and ongoing list and activity B resources are allocated. However, activity B requires one full day of resource 1 and at that time, only 0.75 is available due to the fact that activity A requires 0.25 of resource 1. Thus a resource arc is added, which provides temporal precedence to activity A so that activity A will be performed prior to activity B. Activity A is then moved to the scheduled and done list and activity B, having its resource arcs included showing it has to wait for resource 1 to be used by activity A before it can utilize resource 1, is moved to the scheduled and on-going list [Stage 3(a)4]. The process continues by determining if any of the activities on the unschedulable list have predecessor activities which are now scheduled. Thus for example, if activity E requires that activity B be performed first, B is now on the scheduled list and therefore activity E can be moved to the schedulable list to be processed and scheduled." [Bracketed material supplied and emphasized.] See Deziel reference, column 10, lines 1-18.

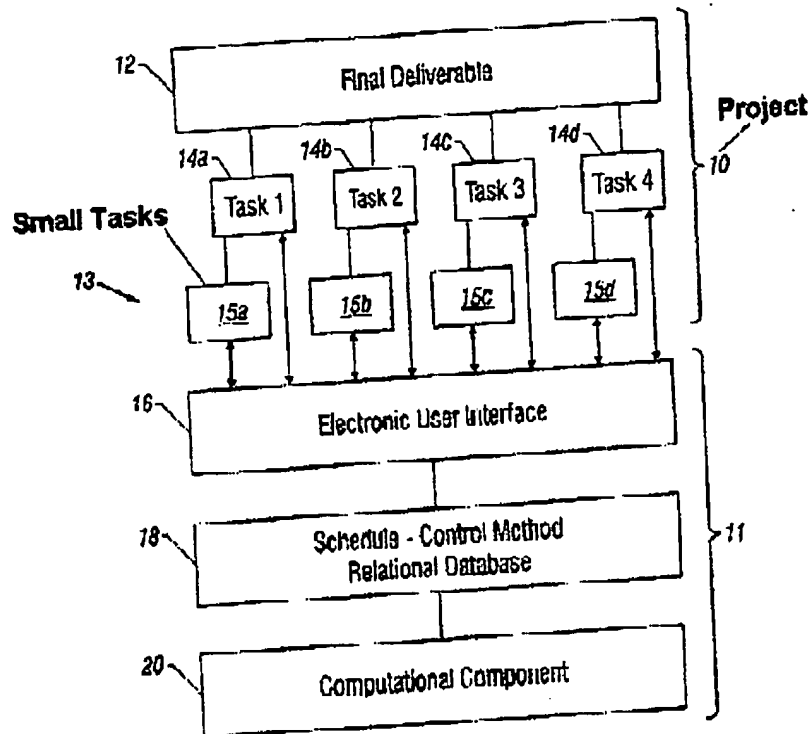
From the passages above, it is clear to one of ordinary skill in the art that the Deziel reference is describing activities which are different from the claimed terminology of "assignments." Figure 3a reproduced above demonstrates that the activities of the Deziel reference are associated with a plurality of resources. For example, Activity A of Figure 3a is associated with resources 1, 3, and 5 where Activity A requires a quarter (0.25) day from Resource 1, a half-day (0.5) from Resource 3, and one-tenth (0.1) of a day from Resource 5.

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In light of Figure 3a and its corresponding text reproduced above describe, it is apparent that the Deziel reference describes a method for scheduling activities, where each activity includes a plurality of resources. Meanwhile, the claimed invention describes a method of scheduling assignments. Specifically, each independent claim recites that each assignment comprises a portion of work that corresponds with an individual resource. Further, each independent claim recites tasks that are divided to form each of the assignments.

Therefore, the Deziel reference does not address a method for scheduling assignments as recited in independent Claims 40, 43, and 49. And it follows logically that the Deziel reference cannot possibly teach (1) determining assignments that are independent of other assignments; (2) determining assignments that have finish date task constraints; (3) determining assignments that have start time task constraints; (4) scheduling the assignments that have start time task constraints before the assignments that are independent of other assignments and assignments that have finish date task constraints; (5) scheduling the assignments that are independent of other assignments; and (6) generating a schedule comprising the N assignments which is balanced and maximizes a utilization of the N resources, as recited in amended independent Claims 40, 43, and 49.

The Examiner admits that Deziel reference does not divide tasks into assignments and that the Deziel reference does not associate each assignment with a resource. To make up for this deficiency, the Examiner relies upon Figure 1 of the Hughes reference. An annotated version of Figure 1 from the Hughes reference is reproduced below. In this annotated version the Applicant has added the words "Small Tasks" and "Project" to the figure in order to clarify what is taught by the Hughes reference:



The Hughes reference describes Figure 1 (reproduced above) in detail and as follows:

"The project 10 is broken down into a series of large-scale tasks 14a-14d. Each large-scale task is broken down into smaller tasks 15a-15d. Each task 14a-14d, 15a-15d results in a product. Products are designs, mechanical or electrical parts, tests, or reports. Each task is defined by a contract between at least two responsible parties, i.e., a receiver and supplier of the product." See Hughes reference, column 5, lines 9-15.

Figure 2A of the Hughes reference further defines the large-scale tasks 14a-14d and the smaller tasks 15a-15d. An annotated version of Figure 2A from the Hughes reference is reproduced below. In this annotated version, the Applicant has added the words "Small Tasks", "Task", and "Technical Manager" to the figure in order to clarify what is taught by the Hughes reference

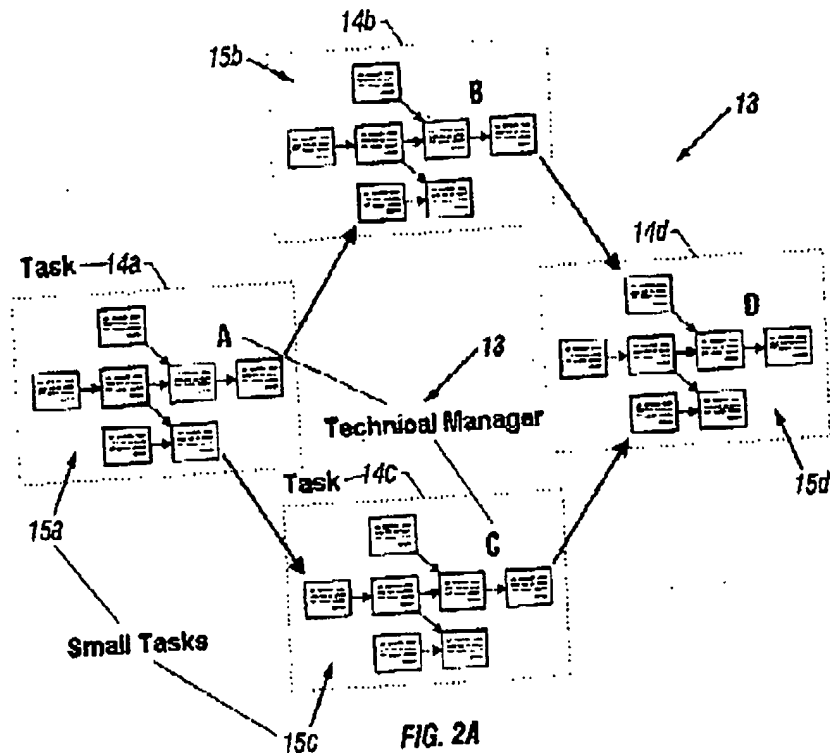


FIG. 2A

The Hughes reference describes Figure 2A (reproduced above) in detail and as follows:

"FIGS. 2A and 2B are schematic drawings showing, respectively, a schematic drawing showing how the schedule-control method is used to manage the project 10 of FIG. 1. . . . For example, tasks 14a-d may involve science and project engineering, instrument development, ground system development, and spacecraft system development for a large-scale project such as manufacture of a NASA spacecraft. The large-scale tasks are managed by either Technical Manager A, B, C, or D." See Hughes reference, column 5, lines 42-51.

"Technical Managers A-D act as either suppliers, receivers, or both using the schedule control method. In the shown example, Manager A supplies a product to both Manager B and Manager C. Both Managers B and C supply a product to Manager D. A contract defining the particular product to be delivered or received is established for each of these relationships using the schedule control method. The status of each product is dynamic, evolving as scheduling events change or work is performed on the product. . . ." See Hughes reference, column 5, lines 52-62.

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"Smaller tasks 15a-d exist within each of the larger tasks 14a-d. These smaller tasks are also managed with the rec/del [receivable/deliverable] system. Here, contracts for products are established between each of the employees (i. e., suppliers or receivers) under a Manager's control. The status of each product in the project is negotiated and analyzed through the use of the electronic user interface, relational database, and computational component shown in FIG. 1. Each employee provides input data for their particular product and can receive status of the project at any given time. In this way, management of the project is distributed over and controlled by the project's entire work force, with each employee directly controlling his or her contract. This decreases the probability of cost overruns in the project, and increases the probability that the project will be completed according to plan." [Bracketed material supplied.] See Hughes reference, column 5, lines 62 through column 6, lines 1-11.

"Applicants have developed a schedule-control method for managing and controlling projects to overcome these and other limitations. The method is implemented using an electronic user interface, relational database, and computational component. Each of these components work together to process input data in a special format that is defined herein as a "receivable/deliverable" (or "rec/del") format. Using the rec/del format, the method breaks down the project into a series of smaller components, referred to herein as "tasks". Each task involves a "contract" between a supplier and a receiver. The contract results in the production of a "product". Users can enter and access up to-the-minute input data concerning a particular product or task from the rec/del system." See Hughes reference, column 2, lines 3-16.

In light of the passages above, it is apparent to one of ordinary skill in the art that the small tasks 15a-15d illustrated in Figures 1 and 2a of the Hughes reference (reproduced above) cannot be interpreted as assignments, where each assignment comprises a portion of work that corresponds with an individual resource. The Examiner acknowledges this lack of correspondence with the invention recited in amended independent Claims 40, 43, and 49 by stating the following on page 5, second paragraph of his office action:

"...wherein cited 'smaller tasks' infer a part (portion) of larger task which is performed by each of the employees, *termed as 'contract' (corresponding to individual resource)*." [Emphasis supplied.]

The Applicant respectfully submits that the Examiner's interpretation of the Hughes reference, specifically, the term "contract", goes beyond the disclosure of the Hughes reference and, therefore, is improper. The Applicant submits that the Hughes reference

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does not make up for the deficiencies of the Dexiel references. And even if the Examiner's proposed combination was feasible to one of ordinary skill in the art, the proposed combination does not teach (1) determining assignments that are independent of other assignments; (2) determining assignments that have finish date task constraints; (3) determining assignments that have start time task constraints; (4) scheduling the assignments that have start time task constraints before the assignments that are independent of other assignments and assignments that have finish date task constraints; (5) scheduling the assignments that are independent of other assignments; and (6) generating a schedule comprising the N assignments which is balanced and maximizes a utilization of the N resources, as recited in amended independent Claims 40, 43, and 49.

In light of the differences between the claims and the references mentioned above, one of ordinary skill in the art recognizes that the Hughes and Dexiel references, alone or in combination, cannot anticipate or render obvious the recitations as set forth in amended independent Claims 40, 43, and 49. Accordingly, reconsideration and withdrawal of this rejection are respectfully requested.

Dependent Claims 41-42, and 45-49

The Applicant respectfully submits that the above-identified dependent claims are allowable because the independent claims from which they depend are patentable over the cited references. The Applicant also respectfully submits that the recitations of these dependent claims are of patentable significance.

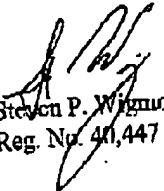
CONCLUSION

The foregoing is submitted as a full and complete response to the Office Action mailed on June 20, 2003. The Applicant and the undersigned thank Examiner Irshadullah for the consideration of these remarks. The Applicant has submitted remarks to traverse the rejections of Claims 40-49. The Applicant respectfully submits that the present application is in condition for allowance. Such Action is hereby courtously solicited.

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If the Examiner believes that there are any issues that can be resolved by telephone conference, or that there are any formalities that can be corrected by an Examiner's Amendment, please contact the undersigned in the Atlanta Metropolitan Area at (404) 572-2884.

Respectfully submitted,


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